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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,967	12/08/2000	Joseph P. Kennedy	EP-1021-CIP	3817

7590 06/13/2002

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EXAMINER

MULLIS, JEFFREY C

ART UNIT PAPER NUMBER

1711

DATE MAILED: 06/13/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,967

Applicant(s)

KENNEDY ET AL.

Examiner

Jeffrey C. Mullis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 17-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2, 4</u> . | 6) <input type="checkbox"/> Other: |

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The references crossed out on applicants' Information Disclosure Statement have not been considered since only the title page or the Table of Contents has been submitted by applicants. It is noted that references AT, AS and AR on page 10 as well as reference AT on page 9 of applicants' Information Disclosure Statements while referring to the entire article are actually only for Abstracts in that applicants have only submitted Abstracts. Therefore only the Abstracts of these references have been considered.

Applicant's election of Group III, claims 12-16 as well as homopolymeric PVC in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 12-16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

The term "about 4" as recited in at least claim 12 makes no sense in the context therein given that a diene necessarily has at least 4 carbon atoms, not less than 4 carbon atoms as implied by "about".

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It is not clear what is embraced by an alkylene having about 0 carbons atoms in that an alkylene necessarily has at least 1 carbon atom.

It is not clear what is intended by an oligomer having about 1 carbon atom as recited by claim 15 in that an oligomer by definition, has at least two units.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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X Claims 12, 15 and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by either Thame et al. "Graft Modification of Polyvinyl Chloride and Related Reactions", Journal of Polymer Science: Part A-1 Volume 10 pages 2507-2525 (1972) or Abbas et

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al. "Thermal Stability of Graft Modifications of PVC and Related Materials", Journal of Polymer Science: Polymer Chemistry Edition, Volume 13, pages 59-68 (1975), both cited by applicants.

Note the experimental section on page 2504 of Thame who discloses grafting of butadiene on polyvinyl chloride using a Lewis acid catalyst or a cobalt catalyst. A similar process is disclosed by Abbas in the last paragraph on page 60 thereof. Note the Abstract of Abbas which refers to the process as grafting of polybutadiene. Since there is no art recognized demarcation between oligomers and polymers, the grafting of polybutadiene onto polyvinyl chloride would embrace the process of grafting oligomers as in instant claim 15 and the same can be said for the process of Thame which is similar.

Claims 12-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Esso, G.B. 174323.

Esso discloses a process in which "halogenated polymers" such as polyvinyl chloride are grafted in the presence of aluminum containing Lewis acids by cationically polymerizable materials such as isoprene and dimethyl butadiene etc. Note the first three pages of the patent in this regard. There are no specific examples in which polyvinyl chloride and dienes are utilized together.

It would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to react polyvinyl

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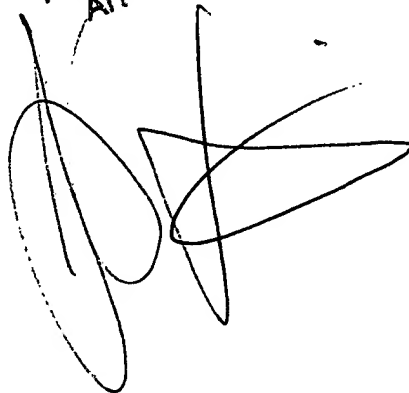
chloride and a diene in the process of Esso since Esso specifically discloses that the polymer utilized may be polyvinyl chloride and that the olefinic material may be a diene including butadiene or isoprene and in the expectation of adequate results absent any showing of surprising or unexpected results.

Any inquiry concerning this communication should be directed to Jeffrey Mullis at telephone number (703) 308-2820.

J. Mullis:cdc

June 12, 2002

Jeffrey Mullis
Primary Examiner
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A handwritten signature in black ink, consisting of a large, stylized 'J' followed by a series of loops and a long horizontal stroke.